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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,360	02/01/2005	Hao Xue	555255012439	6385

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EXAMINER	
KIM, HEE SOO	

ART UNIT	PAPER NUMBER
2109	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/523,360	XUE ET AL.	
	Examiner	Art Unit	
	Hee Soo Kim	2109	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-99 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) ___ is/are allowed.

6)☒ Claim(s) 1-99 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1~99 are presented for examination.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 02/01/2005 was filed after the mailing date of 02/01/2005. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Inventorship

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1~99 are rejected under 35 U.S.C. 103(a) as being unpatentable by Wenzel et al. hereinafter Wenzel (U.S. Patent# 7,139,829) in view of Suzuki et al. hereinafter Suzuki (U.S. Patent# 7,126,924).

Regarding Claim 1,
Wenzel teaches an always-on wireless Internet protocol network, comprising:

a. an access provider network including an always-on packet data serving node, the APN being operable to communicate over a wireless communication link with a mobile station (Fig. 1, Col. 6, Lines 47~57);

b. the PDSN including an inactivity timer, the PDSN being operable to set the inactivity timer to an inactivity timer starting value and send a starting value estimate to the mobile station over the wireless communication link, wherein the starting value estimate is a function of the inactivity timer starting value (Fig. 3, Col. 9, Lines 24~32);

c. Wenzel discloses the mobile station resets the timer each time data is transmitted or a signal is received by the PDSN (Fig. 3, Col. 9, Lines 24~32). This suggests the mobile station includes an inactivity timer estimate operable to receive the starting value estimate from the PDSN and set the inactivity timer estimate to the starting value estimate.

d. the mobile station being further operable to reset the inactivity timer estimate to the starting value estimate when the mobile station communicates with the APN (Fig. 3, Col. 9, Lines 28~32).

Regarding Claim 2,

Wenzel does not disclose the mobile station includes a module that sets and resets the inactivity timer estimate. However, Suzuki teaches a mobile station with an inactivity timer for carrying out a communication with a radio base station by using a radio channel in a CDMA2000 network (Col. 3, Lines 55 ~ Col. 4, Lines 1~4). Although the communication is taken place between the MS and BS, applicant's invention also has the mobile station communicating with PDSN through the RN (consisting of a base station) to receive the inactivity timer from the PDSN. Thus, it would have been obvious to one of ordinary skill in the art to substitute Suzuki's mobile station with inactivity timer and replace it onto Wenzel's invention to arrive at the claimed invention.

Regarding Claim 3,

Suzuki further teaches when a count value of the inactivity timer reaches the set inactivity timer value, the control unit carries out a control to change the connected to the dormant state (Col. 4, Lines 14~16).

Regarding Claim 4,

Suzuki further teaches an inactivity timer for starting to count up in response to reception of a packet from radio base station allowing the control unit to change from the connected to the dormant state. Although the timer increments as opposed to decrementing to a pre-determined value, it would have been an obvious modification to allow such timer to behave the opposite until further communication has ended. Therefore, examiner respectfully finds the claim cannot be given patentable weight.

Regarding Claim 5,
The claim is rejected based on the rationale of claim 4.

Regarding Claim 6,
The claim is rejected based on the rationale of claim 4.

Regarding Claim 7,
Wenzel teaches if the mobile station does not reply to a series of pings from the PDSN, the PPP communication is torn and the resources released and if necessary, assigned to a subsequent mobile terminal (Col. 9, Lines 47~52).

Regarding Claim 8,
Wenzel teaches the wireless communication link between the APN and the mobile station is a PPP protocol session (Col. 9, Lines 53~56).

Regarding Claim 9,
"Official Notice" is taken that it is obvious IP Control Protocol must reach the opened state for a PDSN to send the starting value estimate to the mobile station.

Regarding Claim 10,
Wenzel teaches the PDSN is operable to send an updated starting value estimate to the mobile station if the inactivity timer starting value is modified (Fig. 3, Col. 9, Lines 24~26).

Regarding Claim 11,
Wenzel teaches the always-on wireless IP network is a CDMA2000 network (Col. 5, Lines 58~66).

Regarding Claim 12,
Wenzel teaches if the timer expires without any activity in communications with mobile terminal, PDSN generates a "ping" to mobile terminal. The "ping" is an LCP Echo Request signal (Col. 9, Lines 32~36). This implies an LCP Echo Request signal is a type of LCP message.

Regarding Claim 13,
Claim is rejected based on the rationale of claim 12.

Regarding Claim 14,
Wenzel does not teach the mobile station module resets the inactivity timer estimate in response to sending an Echo-Reply message to the APN. Suzuki discloses a mobile station with an inactivity timer that restarts whenever it transmits or receives a packet to/from the base station (Col. 13, Lines 23~31). Thus, it would have been obvious to one of ordinary skill in the art to substitute Wenzel's mobile station with Suzuki's mobile station with an inactivity timer to arrive at the claimed invention.

Regarding Claim 15,
Claim is rejected based on the rationale of claim 14.

Regarding Claim 16,
Wenzel teaches the PDSN timer instead of a mobile station module resets the inactivity timer estimate to the starting value estimate in response to PPP activity between the mobile station and the APN (Wenzel: Col. 9, Lines 28~32). Suzuki discloses a mobile station with an inactivity timer that restarts whenever it transmits or receives a packet to/from the base station (Suzuki: Col. 13, Lines 23~31). Thus, it would have been obvious to one of ordinary skill in the art to substitute Wenzel's mobile station with Suzuki's mobile station with an inactivity timer to arrive at the claimed invention.

Regarding Claim 17,
Wenzel teaches the PDSN includes an always-on PDSN module that is operable to monitor activity on the wireless communication link between the APN and the mobile station and reset the inactivity timer to the inactivity timer starting value if activity is detected (Col. 9, Lines 28~32).

Regarding Claim 18,
Wenzel teaches the inactivity timer estimate is equal to the inactivity timer starting value (Col. 11, Lines 25~44).

Regarding Claim 19,
Wenzel teaches the inactivity timer is a PPP inactivity timer (Col. 11, Lines 25~26).

Regarding Claim 20,
Wenzel teaches the inactivity timer starting value is a maximum PPP timer value (Col. 10, Lines 52~67).

Regarding Claim 21,
Wenzel teaches the PDSN is operable to send an LCP request message to the mobile station if the PPP inactivity timer reaches a pre-selected value (Col. 9, Lines 32~36).

Regarding Claim 22,
Wenzel teaches the PDSN includes an Echo-Reply-Timeout timer, and wherein the PDSN is operable to reset the Echo-Reply-Timeout timer to an Echo-Reply-Timeout timer starting value and reset the PPP inactivity timer to the inactivity timer starting value if the APN receives a PPP message from the mobile station (Col. 11, Lines 26~41).

Regarding Claim 23,
Wenzel teaches the starting value estimate is a function of the inactivity timer starting value and the Echo-Reply-Timeout timer starting value (Col. 11, Lines 26~41).

Regarding Claim 24,
Wenzel teaches the PDSN is configured to send the mobile station an updated starting value estimate if the inactivity timer starting value or the Echo-Reply-Timeout timer starting value is modified (Col. 11, Lines 26~41).

Regarding Claim 25,
Wenzel teaches the PDSN includes an Echo-Request-Retries counter, and wherein if the Echo-Reply-Timeout counter reaches a pre-determined value, then the PDSN being configured to resend the Echo-Request message to the mobile station and reset the Echo-Request-Retries from a starting value to identify a number of times that the PDSN attempts to send the Echo-Request message to the mobile station without receiving an Echo-Reply message from the mobile station (Col. 11, Lines 26~41).

Regarding Claim 26,
Wenzel teaches if the Echo-Request-Retries counter reaches a pre-selected cutoff value, then the PDSN being configured to close the PPP session (Col. 11, Lines 26~41).

Regarding Claim 27,
Wenzel teaches the starting value estimate is a function of the inactivity timer starting value, the Echo-Reply-Timeout timer starting value and the Echo-Request-Retries counter starting value (Col. 11, Lines 26~41).

Regarding Claim 28,
Wenzel teaches the PDSN is configured to send the mobile station an updated starting value estimate if the inactivity timer starting value, Echo-Reply-Timeout timer starting value or Echo-Request-Retries counter cutoff value is modified (Col. 11, Lines 26~41).

Regarding Claim 29
Wenzel teaches a method of maintaining an always-on wireless communications link between a mobile station and an access provider network (APN), comprising:

establishing a wireless communication link between the mobile station and the APN (Fig. 1, Col. 6, Lines 47~57);

setting an inactivity timer in the APN to an inactivity timer starting value (Fig. 3, Col. 9, Lines 24~26);

sending a starting value estimate from the APN to the mobile station that is a function of the inactivity timer starting value (Fig. 3, Col. 9, Lines 24~26);

setting an inactivity timer estimate in the mobile station to the starting value estimate (Fig. 3, Col. 9, Lines 24~26);

monitoring the wireless communication link between the mobile station and the APN for data traffic between the mobile station and the APN (Fig. 3, Col. 9, Lines 28~32); and

if data traffic is detected, then resetting the inactivity timer estimate in the mobile station to the starting value estimate and resetting the inactivity timer in the APN to the inactivity timer starting value (Fig. 3, Col. 9, Lines 28~32).

Regarding Claim 30~37,
The method claims are rejected based on the system claims 1~28.

Regarding Claim 38,
Wenzel teaches in an always-on wireless internet protocol (IP) network including an access provider network (APN) with an always-on packet data serving node (PDSN), the APN being operable to send and receive data over a wireless communication link with a mobile station, and the PDSN being operable to set an inactivity timer to an inactivity timer starting value and to send a starting value estimate to the mobile station over the wireless communication link that is a function of the inactivity timer starting value, the mobile station comprising:

means for transmitting and receiving data over the wireless communication link, including the starting timer estimate (Fig. 3, Col. 9, Lines 24~26);

Wenzel does not disclose the mobile station includes a timer and a timer module that sets and resets the inactivity timer estimate. However, Suzuki teaches a mobile station with an inactivity timer for carrying out a communication with a radio base station by using a radio channel in a CDMA2000 network (Col. 3, Lines 55 ~ Col. 4, Lines 1~4). Although the communication is taken place between the MS and BS, applicant's invention also has the mobile station communicating with PDSN through the RN (consisting of a base station) to receive the inactivity timer from the PDSN. Thus, it would have been obvious to one of ordinary skill in the art to substitute Suzuki's mobile station with inactivity timer and replace it onto Wenzel's invention to arrive at the claimed invention.

Regarding Claim 39~42,
The claims are rejected based on the similar features presented in previous claims.

Regarding Claim 43,
Wenzel teaches in an always-on wireless internet protocol (IP) network including a mobile station having an inactivity timer estimate, the mobile station being operable to transmit and receive data over a wireless communication link with an access provider network (APN), receive a starting value estimate from the APN and set the inactivity timer estimate to the starting value estimate, the mobile station being further operable to reset the inactivity timer estimate to the starting value estimate when the mobile station transmits data to the APN, the APN comprising:

an always-on packet data serving node (PDSN) that includes an inactivity timer (Col. 9, Lines 24~26);

the PDSN operable to set the inactivity timer to an inactivity timer starting value (Fig. 3, Col. 9, Lines 26~32); and

the PDSN further operable to send the starting value estimate over the wireless communication link to the mobile station, wherein the starting value estimate is a function of the inactivity timer starting value (Col. 9, Lines 24~26).

Regarding Claim 44,

Wenzel teaches in an always-on wireless internet protocol (IP) network including an access provider network (APN) operable to send and receive data over a wireless communication link with a mobile station, the APN being further operable to set an inactivity timer in the APN to an inactivity timer starting value, a method comprising:

transmitting a starting value estimate over the wireless communication link to the mobile station using a protocol stack that includes a point-to-point protocol (PPP) layer (Fig. 3, Col. 9, Lines 28~32);

wherein the starting value estimate is a function of the inactivity timer starting value (Fig. 3, Col. 9, Lines 28~32); and

wherein the mobile station is operable to set an inactivity timer estimate to the starting value estimate and reset the inactivity timer estimate to the starting value estimate when the mobile station transmits data to the APN (Fig. 3, Col. 9, Lines 28~32).

Regarding Claim 45,

Wenzel does not explicitly teach the PDSN has an inactivity timer configured to start upon the PDSN entering a packet data session, or a transceiver configured to send a starting value estimate that is a function of an inactivity timer starting value. Although the features are obvious, examiner concludes "Official notice" is taken that an always-on PDSN in a CDMA2000 network consists of a processor coupled to transceiver, the processor configured to monitor the always-on wireless communication link between the mobile station and the PDSN for data traffic between the mobile station and the PDSN and an always-on PDSN module coupled to the processor and the inactivity timer, the always-on module configured to reset the inactivity timer to the inactivity timer starting value if processor detects data traffic.

Regarding Claim 46~61,

The claims are rejected based on the similar features presented in previous claims.

Regarding Claim 62,

Wenzel teaches a method of maintaining an always-on wireless communication link in a PDSN, the method comprising:

entering a packet data session (Col. 9, Lines 15~23);

starting an inactivity timer for the packet data session (Col. 9, Lines 24~26);

sending a starting value estimate that is a function of an inactivity timer starting value (Col. 9, Lines 28~32);

monitoring the always-on wireless communication link for data traffic (Fig. 3, Col. 9, Lines 32~35); and

if data traffic is detected, then resetting the inactivity timer to the inactivity timer starting value (Col. 9, Lines 28~32).

Regarding Claim 63~73,
The claims are rejected based on the similar features presented in previous claims.

Regarding Claim 74,
Wenzel does not disclose the mobile station includes a module that sets and resets the inactivity timer estimate. However, Suzuki teaches a mobile station with an inactivity timer for carrying out a communication with a radio base station by using a radio channel in a CDMA2000 network (Fig. 6, Col. 3, Lines 55 ~ Col. 4, Lines 1~4). Although the communication is taken place between the MS and BS, applicant's invention also has the mobile station communicating with PDSN through the RN (consisting of a base station) to receive the inactivity timer from the PDSN. Thus, it would have been obvious to one of ordinary skill in the art to substitute Suzuki's mobile station with inactivity timer and replace it onto Wenzel's invention to arrive at the claimed invention.

Regarding Claim 75~90,
The claims are rejected based on the similar features presented in previous claims.

Regarding Claim 91,
The claim is rejected based on the rationale similar to claim 74.

Regarding Claim 92~99,
The claims are rejected based on the similar features presented in previous claims.

Conclusion

Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hee Soo Kim whose telephone number is (571) 270-3229. The examiner can normally be reached on Monday - Friday 7:30AM - 5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marvin Lateef can be reached on (571) 272-5026. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HSK
8/29/07

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